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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BERNATZ, KEVIN M

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 11/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/683,114

Applicant(s)

DAVIS ET AL.

Examiner

Kevin M Bernatz

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11, 13-21 and 23-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-21 and 23-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

1. Amendments to claims 1, 8, 16, 22, 30 and 34 - 38, filed on August 28, 2002, have been entered in the above-identified application.
2. Applicants' declaration of Dr. Reitz, filed August 28, 2002, has been reviewed and entered in the above-identified application.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 112***

4. Claims 1 – 11, 13 – 21, and 23 – 38 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a storage **disk**, does not reasonably provide enablement for a storage tape or ribbon.

The above rejection is maintained for the reasons of record as set forth in Paragraph No. 4 of the Office Action mailed on May 28, 2002 (Paper No. 4).

5. Claims 1 – 11, 13 – 21 and 23 – 38 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The tilt and axial displacement are critical or essential properties of the invention, but are not enabled by the disclosure.

The above rejection is maintained for the reasons of record as set forth in Paragraph No. 4 of the Office Action mailed on May 28, 2002 (Paper No. 4).

6. Claims 1 – 11, 13 – 18, 20, 21 and 23 – 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Regarding claims 1 – 4, 10, 11, 20, 21, 31 – 35, the phrases "less than about", "at least about" and "greater than about" renders the claim(s) indefinite because the metes and bounds are ill defined.

The above rejection is maintained for the reasons of record as set forth in Paragraph No. 6 of the Office Action mailed on May 28, 2002 (Paper No. 4). The examiner notes identical reasons apply for the phrase "greater than about" (in newly added claims 34 and 35) as with the phrases "at least about" and "less than about".

8. Claims 1 – 11, 13 – 18, 21, 23 – 30 and 32 – 37 recite limitations that require the storage media to be a disk, yet there is no antecedent basis for the storage media to be a disk-shaped media.

The above rejection is maintained for the reasons of record as set forth in Paragraph No. 6 of the Office Action mailed on May 28, 2002 (Paper No. 4). The examiner notes identical reasons apply to newly added claims 34 – 37.

9. The term "continuous" in claims 36 and 37 is a relative term which renders the claims indefinite. The term "continuous" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Continuous can be interpreted to mean connecting from one side to another, covering the entire surface, or covering part of the surface as long as each part of the covering connects with another part (for example, the patterns represented in Figures 11 and 12 could be considered as "continuous" since all parts of the patterns touch each other). Based on the specification, the examiner cannot reasonably ascertain which meaning applicants are attempting to claim, and therefore no art rejection could be applied to these claims.

***Claim Rejections - 35 USC § 102***

***Claim Rejections - 35 USC § 103***

10. Claim 30 is rejected under 35 U.S.C. 102(b) as anticipated by ***or, in the alternative***, under 35 U.S.C. 103(a) as obvious over Tanabe et al. ('767) for the reasons of record as set forth in Paragraph No. 9 of the Office Action mailed on May 28, 2002 (Paper No. 4).

11. Claims 1 – 9, 15 – 18, 20, 21, 24 – 26, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al. ('767) in view of Nakayama et al. ('602), Annacone et al. ('045 B1) and Sandstrom ('461) for the reasons of record as set forth in Paragraph No. 10 of the Office Action mailed on May 28, 2002 (Paper No. 4).

12. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanabe et al. ('767) in view of Nakayama et al. ('602), Annacone et al. ('045) and Sandstrom ('461) as applied above (this combination of references hereafter referred to as TNAS), and further in view of Wu et al. ('422) for the reasons of record as set forth in Paragraph No. 11 of the Office Action mailed on May 28, 2002 (Paper No. 4).

13. Claims 13, 14, 29, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over TNAS as applied above, and further in view of Napoli et al. ('155) for the reasons of record as set forth in Paragraph No. 12 of the Office Action mailed on May 28, 2002 (Paper No. 4).

Regarding newly added claims 34 and 35, as taught by Napoli et al. ('155) and Nakayama et al. ('602) per the reasons of record, it would have been obvious to use a polymer having a glass temperature over 250 °C in order to be capable of withstanding the processing temperatures (see rejection of record, Paper No. 4, Paragraph 12).

14. Claims 19 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over TNAS as applied above, and further in view of Lacotte et al. ('407) for the reasons of record as set forth in Paragraph No. 13 of the Office Action mailed on May 28, 2002 (Paper No. 4).

Regarding newly added claim 38, TNAS disclose substrate thickness values meeting applicants' claimed limitation (col. 26, line 41).

15. Claims 23, 27, 28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over TNAS as applied above, and further in view of Oniki et al. ('083) for the reasons of record as set forth in Paragraph No. 14 of the Office Action mailed on May 28, 2002 (Paper No. 4).

16. Claim 30 is rejected under 35 U.S.C. 102(b) as anticipated by ***or, in the alternative***, under 35 U.S.C. 103(a) as obvious over Lewis et al. ('844) for the reasons of record as set forth in Paragraph No. 15 of the Office Action mailed on May 28, 2002 (Paper No. 4).

17. Claims 1 – 9, 14 – 21, 23 – 28, 31 – 33 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. ('767) in view of Nakayama et al. ('602), Annacone et al. ('045) and Sandstrom ('461) for the reasons of record as set forth in Paragraph No. 16 of the Office Action mailed on May 28, 2002 (Paper No. 4).

Regarding newly added claim 38, Lewis et al. disclose substrate thickness values meeting applicants' claimed limitation (examples).

18. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. ('844) in view of Nakayama et al. ('602), Annacone et al. ('045) and Sandstrom ('461) as applied above (this combination of references hereafter referred to as LNAS), and further in view of Wu et al. ('422) for the reasons of record as set forth in Paragraph No. 17 of the Office Action mailed on May 28, 2002 (Paper No. 4).

19. Claims 13, 29, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over LNAS as applied above, and further in view of Napoli et al. ('155) for the reasons of record as set forth in Paragraph No. 18 of the Office Action mailed on May 28, 2002 (Paper No. 4).

Regarding newly added claims 34 and 35, as taught by Napoli et al. ('155) and Nakayama et al. ('602) per the reasons of record, it would have been obvious to use a polymer having a glass temperature over 250 °C in order to be capable of withstanding the processing temperatures (see rejection of record, Paper No. 4, Paragraph 18).

20. Claim 30 is rejected under 35 U.S.C. 102(e) as anticipated by ***or, in the alternative***, under 35 U.S.C. 103(a) as obvious over Ishida et al. ('016 B1) for the reasons of record as set forth in Paragraph No. 19 of the Office Action mailed on May 28, 2002 (Paper No. 4).

21. Claims 1 – 11, 14 – 17, 20, 21, 24 – 26, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. ('016) in view of Annacone et al. ('045) and Sandstrom ('461) for the reasons of record as set forth in Paragraph No. 20 of the Office Action mailed on May 28, 2002 (Paper No. 4).

22. Claims 13, 29, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida et al. in view of Annacone et al. and Sandstrom as applied



above (this combination of references hereafter referred to as IAS), and further in view of Nakayama et al. ('602) and Napoli et al. ('155) for the reasons of record as set forth in Paragraph No. 21 of the Office Action mailed on May 28, 2002 (Paper No. 4).

Regarding newly added claims 34 and 35, as taught by Napoli et al. ('155) and Nakayama et al. ('602) per the reasons of record, it would have been obvious to use a polymer having a glass temperature over 250 °C in order to be capable of withstanding the processing temperatures (see rejection of record, Paper No. 4, Paragraph 21).

23. Claims 18, 23, 27, 28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over IAS as applied above, and further in view of Oniki et al. ('083) for the reasons of record as set forth in Paragraph No. 22 of the Office Action mailed on May 28, 2002 (Paper No. 4).

24. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over IAS as applied above, and further in view of IDS reference Lacotte et al. ('407) for the reasons of record as set forth in Paragraph No. 23 of the Office Action mailed on May 28, 2002 (Paper No. 4).

25. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over IAS in view of Lacotte et al. ('407) as applied above, and further in view of Oniki et al. ('083).

IAS in view of Lacotte et al. is relied upon as above.

None of IAS, nor Lacotte et al. teach controlling the thickness to within applicants' claimed limitation.

However, the substrate thickness is a cause-effective variable which can be optimized to control the physical (stiffness, mass, etc.) properties of the substrate. Oniki et al. teach substrate thickness values fully encompassing applicants' claimed range for total medium thickness and substrate thickness (col. 3, lines 63 – 67).

It would have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as the substrate thickness through routine experimentation in the absence of a showing of criticality in the claimed thickness values, especially given the teachings in Oniki et al. regarding desired thickness values. *In re Boesch*, 205 USPQ 215 (CCPA 1980), *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

#### ***Examiner's Comments***

26. Applicants' declaration by Dr. Reitz has been considered but was not found persuasive. The examiner notes that Dr. Reitz is an employee of the Assignee, though is not a co-inventor of the claimed subject matter. Dr. Reitz alleges that "storage media *can* be produced in accordance with Tanabe et al., Lewis et al., and Ishida et al., ... that has a tilt of greater than 1.5°" (paragraph 9, emphasis added). However, no actual examples from these references were compared and measured. Dr. Reitz further alleges that "an artisan knows that the media taught in those references does not

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require such a characteristic to function” (paragraph 11), but does not provide any evidence to that end.

In addition, Dr. Reitz also addresses the equivalency argument supported by the reference Nakayama et al. regarding whether substrates could be used for both optical and magnetic media. While the examiner appreciates the opinion of Dr. Reitz that one of ordinary skill would not look to a substrate for optical media when designing substrates for magnetic media, the examiner notes that Nakayama et al. provides a clear teaching in the art that one *would* be motivated to review both magnetic and optical disk substrates (Title: “Composite substrate for ***magnetic or optical disk*** and process for production thereof”, emphasis added).

In summary, the examiner has reviewed the declaration of Dr. Reitz and does not find it persuasive that the disclosed references would not inherently meet the tilt requirement (esp. example 8 of Lewis et al., examples 1, 5 and 16 of Tanabe et al., and the embodiment in column 23 of Ishida et al.). Furthermore, the examiner notes that Nakayama et al. provides an explicit teaching in the art that one of ordinary skill at the time of applicants’ invention would have known that substrates could be used for both optical, as well as magnetic, recording media.

***Response to Arguments***

**27. The rejection of claims 1 – 11 and 13 - 33 under 35 U.S.C § 112, 1<sup>st</sup>**

**Paragraph – Enablement for tapes or ribbons**

Applicant(s) argue(s) that data storage media is supported by the specification and that the claims cover or exclude tapes or ribbons depending on whether the tape or ribbon meets the claimed limitations. The examiner respectfully disagrees.

Applicants' disclosure refers to the data storage media and the substrate in both the background section, as well as the description of the invention. Though-out the entire disclosure, the substrates are only referred to as being in the form of disks and applicants' disclosure is directed to optimizing properties solely associated with disks, i.e. tilt, axial displacement, harmonic frequency, etc. (Paragraph 0003: "Conventional polymeric data storage media has been employed in areas such as compact disks (CR-ROM) and recordable or re-writeable compact disks .."; Paragraph 0006: "These substrates are formed into a disk ..."; Paragraph 0011: "...rotating a storage media comprising a substrate..."; Paragraph 0029: "The storage media, compared to conventional CDs and similar media"...; Paragraphs 0030 – 0037 and 0114, which refer to properties of storage **disks**; Paragraph 0049: "Adjusting the geometry of the substrate enables manipulation of the moment of inertia of the substrate when rotating..."; Paragraph 0050: "Conventionally, during use, storage media has been rotated at constant speed."; Paragraph 0063: "...around the inner diameter"; and Paragraph 0084: "One unexpected result of the storage media described herein ... was retention of head slap performance...").

**28. The rejection of claims 1 – 11 and 13 - 33 under 35 U.S.C § 112, 1<sup>st</sup>**

**Paragraph – Disclosure not enabling**

Applicant(s) argue(s) that tilt and axial displacement are art recognized terms. The examiner respectfully disagrees.

Applicants allege that “axial displacement” is an art recognized term with known methods of obtaining values but provide no evidence to support their allegation.

Applicants also allege that “tilt” is an art recognized term and only requires a designation of at rest or spinning at a certain rate. While the examiner agrees that tilt *additionally* requires the state of the medium to be specified, the examiner notes that there is a difference between the “tilt” (or displacement from a horizontal plane) depending on whether one is measuring the media at rest sitting on a table, or at rest held within a mounting. See Suwabe (U.S. Patent No. 5,987,004) which teaches that the degree of warp is directly related to the clamping pressure/strength when held in a mounting (Figure 4; col. 4, lines 58 – 66; and col. 5, lines 13 – 14) and Kinoshita et al. (U.S. Patent No. 5,504,638) which teach that the clamping force causes the warp in the storage media (Figure 12; col. 1, lines 44 – 48; and col. 11, lines 19 – 23: “When the hub 32 is mounted on the hub 121, a pressing force is exerted by the clamp 32 tending to produce a bending moment  $M_2$  which would cause a warp of the disk 12 such that the disk 12 is convexed towards the clamp 32”). Applicants’ disclosure provides no guidance on how the tilt is to be measured. In addition, there is no evidence as to what is meant by “radial tilt” versus “tangential tilt” (i.e. the examiner does not understand

how one measures a “radial tilt” versus a “tangential tilt” and there is no evidence of record clearly stating how these measurements are performed).

**29. The rejection of claims 1 – 4, 10, 11, 20, 21 and 31 - 33 under 35 U.S.C § 112, 2<sup>nd</sup> Paragraph – “less than about” or “at least about”**

Applicant(s) argue(s) that the use of “about” in these claims is definite because one of ordinary skill in the art could readily determine the values of these elements. The examiner respectfully disagrees.

It has been found that the phrase “less than about” is indefinite barring a showing in the specification as to what values around the endpoint are envisioned to be encompassed by the word “about”. *Ex parte Lee*, 31 USPQ2d 1105 (BdPatApp&Int. 1993). In the instant case, applicant(s) have used the **mathematical expression** “less than about” (or its equivalents), namely “at least about” and “greater than about”. In both cases, the phrases used have **exact** meanings (i.e. “greater than X”, “at least X” and/or “less than X”) which are combined with a **non-exact** modifier (i.e. “about”). As such, the expressions are indefinite since the mathematically exact expression(s) “at least”, “less than” and/or “greater than” require(s) an exact endpoint and the modifier “about” removes that exact endpoint without guidance in the disclosure as to what values are envisioned to be encompassed by “about”. Only in cases where it is clear from provided experimental data what the “about” is intended to encompass are the phrases “less than about” or “greater than about” (or their equivalents) considered

definite. The examiner recommends using non mathematically exact expressions such as “about X, or less” or “about X, or more”.

As an example to better illustrate the Office’s position, applicants should consider the following. The limitation “less than 10”, clearly covers a range of “any value less than the value of 10, **excluding** 10”. “Less than or equal to 10”, clearly covers a range of “any value less than the value of 10, **including** 10”. These limitations are not equivalent in that one provides more coverage than the other (i.e. a value of exactly 10 would only infringe on the latter limitation). Less than “about 10” is not clear because it isn’t clear if the “about 10” implies values on the side already provided for by the “less than” part (i.e. an equivalent expression to “less than 9.993” instead of “less than 10”) or if it is attempting to gain additional coverage by both **including** 10 and then some (i.e. an equivalent expression to “less than 10.0234” instead of “less than or equal to 10”). Since the specification does not provide guidance as to what the “about” covers, the claim is indefinite in terms of U.S.C. 112 2<sup>nd</sup> Paragraph since one of ordinary skill could not reasonably ascertain the full scope of the claim.

**30. The rejection of claims 1 – 11, 13 – 18, 21 – 30, 32 and 33 under 35 U.S.C § 112 2<sup>nd</sup> Paragraph – Antecedent for disk limitations**

Applicant(s) argue(s) that “a disk shaped media” are not words in the claims and therefor there is no antecedent requirement for them to be in the claims. The examiner respectfully disagrees.

As stated in the rejection of record, the claims require properties that are only found (and disclosed) in disk shaped media. By further limiting the "storage media" to require the claimed limitations, applicants are also requiring the storage media to be in the form of a disk (or it could not possess the claimed limitation), yet there is no positive recitation in the claim(s) that the storage media *is* disk shaped. It is this lack of positive antecedence which is missing in the above identified claims.

**31. The rejection of claim 30 under 35 U.S.C § 102(b)/(e) and/or 103(a) – Tanabe et al., Lewis et al., or Ishida et al.**

Applicant(s) argue(s) that the examiner concedes that the references do not teach a claimed limitation while, at the same time, stating that the reference anticipate the present invention by inherency. In addition, applicants argue that none of the above references teach, discuss, or mention "tilt", and therefor the disclosed property would not inherently be present. The examiner respectfully disagrees.

The examiner assumes that applicants are referring to the 102/103 rejection of claim 30, along with the 103 rejection of claim 1 (and others). The examiner notes that in the 103 rejections, the argument of inherency is also maintained, with Sandstrom only relied upon as additional evidence to support the examiner's "sound basis" for believing that the products of the applicant and the prior art possess the same limitations ("Therefor, in addition to the above disclosed limitations, the presently claimed property of the tilt measured in the resting state would have obviously been present because the prior art product is substantially identical in structure ... and it is known in the art to



minimize the axial displacement and tilt as taught by Sandstrom in order to allow for high density near field recording”). The subsequent paragraph clearly provides additional motivation that “***if not already inherently possessing said limitations***, to possess a tilt and axial displacement meeting applicants’ claimed limitations” (emphasis added) would have been obvious in view of the teachings in the prior art.

Since there is no evidence in the art one way or the other, it is impossible for the examiner to know with absolute certainty whether the disclosed prior art would inherently possess the claimed limitations. However, the Office is not required to know with absolute certainty, only to possess a sound basis for believing that the products do possess the claimed limitation.

With regard to the claimed properties, the examiner notes that several embodiments in the prior art (Lewis et al., Example 8; Tanabe et al., Examples 1, 5, and 16; and Ishida et al., embodiment disclosed in column 23) appear to be substantially identical to applicants’ disclosed and claimed structure (hard core with a thin polymeric overcoat). In addition, the examiner notes Zou et al. (U.S. Patent No. 6,214,429 B1) which teach that the deflection of a disk at rest is known to depend on the thickness, the outer diameter and the specific elastic modulus, and that materials of high Young’s modulus are known to possess negligible deflection (glass is a material with a high Young’s modulus) (col. 2, lines 47 – 65 and col. 3, line 12 bridging col. 4, line 2). See also Takagi et al. (U.S. Patent No. 4,816,351) which teach that near 0 deflection is required for “practical use” (Figures 3 and 4 and col. 8, lines 31 – 59: “... the laminate disk having a 0.5  $\mu$ -thick Co oxide film showed a least degree of curl and was found to

be sufficiently flat for a practical use”) and Maro et al. (U.S. Patent No. 6,027,801) which measures “warpage” at 1000 RPMs and shows excellent results for 1.2 mm polycarbonate disks (col. 7, lines 11 – 21; Table 4; and col. 10, lines 26 – 64). As such, the examiner deems that there is sufficient evidence in the prior art that the examiner has a sound basis for believing that the claimed properties would inherently be present. While there is no evidence of record showing that they are not inherently present, the examiner further notes that there is sufficient motivation in the prior art to optimize them to within applicants’ claimed limitations if they are not inherent in the disclosed embodiments.

**32. The rejection of claims 1 – 11 and 13 - 33 under 35 U.S.C § 103(a) – various references**

Applicant(s) argue(s) that Nakayama et al. fail to teach the equivalence of optical and magnetic media in terms of choice of substrates. The examiner respectfully disagrees.

Applicant(s) are reminded that “the test for obviousness is not whether features of the secondary reference may be bodily incorporated into the primary reference’s structure, nor whether the claimed invention is expressly suggested in any one or all of the references, rather the test is what the combined teachings would have suggested to those of ordinary skill in the art.” *Ex parte Martin* 215 USPQ 543, 544 (PO BdPatApp 1981). In the instant case, Nakayama et al. clearly teach that substituting an optical storage layer (especially a near-field optical layer) for a magnetic storage layer would be

known to one of ordinary skill in the art. In addition, the examiner notes that substrates for both optical and magnetic data storage media would require optimization of nearly identical properties (i.e. surface roughness, flatness, durability, cost, mass, etc).

In addition, applicants argue that Sandstrom is not combinable with the other references of record because Sandstrom requires an extremely thick substrate to meet the limitation of low warp and/or tilt. The examiner respectfully disagrees.

The examiner notes that Sandstrom is merely relied upon as a teaching reference to illustrate that minimizing "tilt" and/or "warp" is known in the art ("However, Sandstrom teaches that both tilt and axial displacement are undesired in a recording medium and that substrates possessing high flatness are known to be desired ..."). At no point does the examiner maintain or suggest substituting the structure of Sandstrom for the structure of Tanabe et al., Lewis et al. or Ishida et al. (see rejections of record).

Finally, applicants argue that Nakayama et al. fail to provide motivation for a glass temperature meeting applicants' claimed limitations. The examiner respectfully disagrees.

Nakayama et al. teach maximizing the glass temperature of the polymers used to coat the composite substrate. Napoli et al. teach that typical processing temperatures are up to 250 °C. The examiner deems that the combined teachings of Napoli et al. in view of Nakayama et al. would be sufficient to motivate one of ordinary skill to select a polymer having a glass temperature greater than 250 °C in order to insure that the polymer is not degraded during the processing steps. The examiner notes that JP 63-205817-A, which teach a composite substrate comprising a ceramic core and a

polyimide coating because it is "thermal resistant" (English Translation), as well as Principles of Polymerization (pages 150 and 158 – 162) which teach that high-temperature polymers are known to be desired for high temperature use, including temperatures above 300 °C for aromatic polyimides. Principles of Polymerization also teaches that the use temperature is always below the glass temperature, so a material necessary to be used at a processing temperature of 250 °C, would require a glass temperature above that. As such, the examiner deems that there is sufficient guidance in the prior art to motivate one to use a polymer possessing a glass temperature meeting applicants' claimed limitations, given the teachings of Nakayama et al. and Napoli et al. cited above.

### ***Conclusion***

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following art is the evidenciary art referred to in the Response to Argument sections above: Kinoshita et al. (U.S. Patent No. 5,504,638), Suwabe (U.S. Patent No. 5,987,004), Zou et al. (U.S. Patent No. 6,214,429 B1), Maro et al. (U.S. Patent No. 6,027,801), Takagi et al. (U.S. Patent No. 4,816,351), and Principles of Polymerization (Ed. Odian, page 150 and 158 – 162).

34. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (703) 308-1737. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



KMB  
November 20, 2002



Paul Thibodeau  
Supervisory Patent Examiner  
Technology Center 1700